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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements to implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Board.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:

1. "A Guide to Methods and Standards for the Measurement of Water Flow," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421.)
2. "Water Measurement Manual," U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027.)
3. "Flow Measurement in Open Channels and Closed Conduits," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)
4. "NPDES Compliance Sampling Manual," U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services.

D. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstration compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	M-001	At the last connection prior to discharge to the San Joaquin River.
--	R-001	50 feet upstream from Discharge 001
--	R-002	100 feet downstream from Discharge 001

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. The Discharger shall monitor groundwater seepage and stormwater pumped from Oakwood Lake at M-001 as follows:

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Cumulative	Daily	[6]
Temperature	°F	Field Measurement	1x/Week	[6]
Total Suspended Solids	mg/L	Grab	1x/Week	[6]
Turbidity	NTUs	Grab	1x/Week	[6]
Specific Conductance (EC @ 25° C)	µmhos/cm	Field Measurement	1x/Week	[6]
pH	pH units	Field Measurement	1x/Week	[6]
Chemical Oxygen Demand (COD)	mg/L	Grab	1x/Month	[6]
Chlorine, Total Residual	mg/L	Grab	1x/Month	[6]
Settleable Solids	ml/L	Grab	1x/Month	[6]
Antimony (total recoverable)	µg/L	Grab	1x/Month	[6]
Arsenic (total recoverable)	µg/L	Grab	1x/Month	[6]
Arsenic (dissolved)	µg/L	Grab	1x/Month	[6]
Copper (total recoverable)	µg/L	Grab	1x/Month	[6]
Mercury (total recoverable)[2]	µg/L	Grab	1x/Month	[6]
Aluminum (total recoverable)[3]	µg/L	Grab	1x/Month	[6]
Ammonia (total recoverable)	µg/L	Grab	1x/Month	[6]
Barium (dissolved)	µg/L	Grab	1x/Month	[6]
Iron (total recoverable)	µg/L	Grab	1x/Month	[6]
Iron (dissolved)	µg/L	Grab	1x/Month	[6]
Manganese (total recoverable)	µg/L	Grab	1x/Month	[6]
Manganese (dissolved)	µg/L	Grab	1x/Month	[6]
Chloride	mg/L	Grab	1x/Quarter	[6]
Total Dissolved Solids	mg/L	Grab	1x/Quarter	[6]
Boron	µg/L	Grab	2x/Year	[6]
Fluoride	mg/L	Grab	2x/Year	[6]
Lead (total recoverable)	µg/L	Grab	2x/Year	[6]

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chlorodibromomethane	µg/L	Grab	2x/Year	[6]
Dichlorobromomethane	µg/L	Grab	2x/Year	[6]
Bis(2-Ethylhexyl)Phthalate	µg/L	Grab	2x/Year	[6]
Standard Minerals[4]	mg/L	Grab	1x/Year	[6]
Chlorpyrifos	µg/L	Grab	1x/Year	[6]
DDT	µg/L	Grab	1x/Year	[6]
Diazinon	µg/L	Grab	1x/Year	[6]
Endrin Aldehyde	µg/L	Grab	1x/Year	[6]
Lindane	µg/L	Grab	1x/Year	[6]
Acute Toxicity[5]	% survival	Flow-Proportional 24-hr. composite	1x/Year	[6]
Chronic Toxicity	See below Section V	Flow-Proportional 24-hr. composite	1x/Year	[6]
EPA Priority Pollutants		See Priority Pollutant Monitoring Below Section IX	Once Per Permit Term	[6]

1. Constituents are to be reported in these units.
2. Use clean sample collection techniques and EPA Test Method 1669 or 1631, or later amendment for Mercury.
3. Compliance can be demonstrated using either total, or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by US EPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.
4. Standard minerals shall include all major cations and anions and include a verification that the analysis is complete (i.e. cation/anion balance).
5. All acute toxicity bioassays shall be performed according to EPA-821-R-02-012 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002 (or latest edition) using Pimephales promelas with no pH adjustment, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). Temperature and pH shall be recorded at the time of bioassay sample collection.
6. Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA-821-R-02-013*, Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* Fourth Edition, October 2002. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Control waters shall be provided by the laboratory. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days.

Species: *Pimephales promelas, Ceriodaphnia dubia and Selenastrum capriconicutum*

Frequency: *Annually*

Dilution Series:

	Dilutions (%)					Controls	
	100	**75**	**50**	**25**	**12.5**	River Water	Lab *Water*
% Effluent	100	75	50	25	12.5	0	0
% Dilution Water*	0	25	50	75	87.5	100	0
% Lab Water	0	0	0	0	0	0	100

* Dilution water will be receiving water from the San Joaquin River taken upstream from the discharge point. The dilution series and dilution water may be altered upon approval of Regional Board staff.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations R-001 and R-002

1. The Discharger shall monitor the San Joaquin River at R-001 and R-002 as follows:

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1x/Month	[4]
pH	pH Units	Field Measurement	1x/Month	[4]
Turbidity	NTUs	Field Measurement	1x/Month	[4]
Temperature	°F	Field Measurement	1x/Month	[4]
EC @ 25° C	µmhos/cm	Field Measurement	1x/Month	[4]
Antimony(total recoverable)	µg/L	Grab	1x/Quarter	[4]
Arsenic (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Arsenic (dissolved)	µg/L	Grab	1x/Quarter	[4]
Copper (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Barium (dissolved)	µg/L	Grab	1x/Quarter	[4]
Iron (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Iron (dissolved)	µg/L	Grab	1x/Quarter	[4]
Manganese (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Manganese (dissolved)	µg/L	Grab	1x/Quarter	[4]
Chloride	mg/L	Grab	1x/Quarter	[4]
Total Dissolved Solids	mg/L	Grab	1x/Quarter	[4]
Aluminum	µg/L	Grab	1x/Quarter	[4]
Ammonia	µg/L	Grab	1x/Quarter	[4]
COD	mg/L	Grab	1x/Year	[4]
Standard Minerals[3]	mg/L	Grab	1x/Year	[4]

1. Constituents are to be reported in these units.
2. Use clean sample collection techniques and EPA Test Method 1669 or 1631, or later amendment for Mercury.
3. Standard minerals shall include all major cations and anions and include a verification that the analysis is complete (i.e. cation/anion balance).
4. Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

B. Visual Receiving Water Monitoring Upstream and Downstream Receiving Water Sampling Points

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions. Attention shall be given to the presence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring reports.

IX. OTHER MONITORING REQUIREMENTS

A. Priority Pollutant Monitoring

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Accordingly, the Regional Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger conduct effluent and upstream receiving water monitoring of priority pollutants one time no more than 365 days and no less than 180 days prior to expiration of this Order. The list of priority pollutants and required minimum levels (MLs) (or criterion quantitation limits) is included as Attachment G. The Discharger must analyze pH and hardness at the same time as priority pollutants.

All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols required in Section 2.4.4, *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, 2000:

1. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

2. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

3. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

4. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.

2. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

3. The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

B. Self Monitoring Reports

1. At any time during the term of this permit, the Discharger, after notification by the State or Regional Board, may be required to electronically submit self-monitoring reports. Until such time as electronic submission of self monitoring reports is required, the Discharger shall submit self-monitoring reports in accordance with the requirements described further below.

2. The Discharger shall submit quarterly Self Monitoring Reports including the results of all required monitoring and monitoring conducted in addition to the minimum required monitoring and using USEPA approved test methods or other test methods specified in this Order. Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter.

3. Monitoring periods for all required monitoring shall commence according to the following schedule:

Sampling Frequency	Monitoring Period Starts On…	Monitoring Period	Reporting Due with SMR on…
1x/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second month following month of sampling
1x/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month	First day of second month following month of sampling
1x/Quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
1x/Year	January 1 following (or on) permit effective date	January 1 through December 31	February 1
Once Per Permit Term	365 days prior to the expiration of this Order	No more than 365 days and no less than 180 days prior to expiration of this Order	No less than 180 days prior to expiration of this Order

4. The Discharger shall report with each sample result the applicable Minimum Level (ML) and the laboratory current Method Detection Limit (MDL) as determined by the procedure in 40 CFR Part 136.

5. The Discharger shall arrange all reported data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.

6. The Discharger shall attach a cover letter to its Self Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.

7. Self Monitoring Reports must be submitted to the Regional Board, signed and certified as required by the standard provisions (Attachment D), to the address listed below:

   Central Valley Regional
   Water Quality Control Board
   11020 Sun Center Drive #200
   Rancho Cordova, CA 95670-6114

C. Discharge Monitoring Reports

1. When requested by U.S. EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy to the address listed below:

   State Water Resources Control Board
   Discharge Monitoring Report Processing Center
   Post Office Box 671
   Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self generated or modified cannot be accepted.